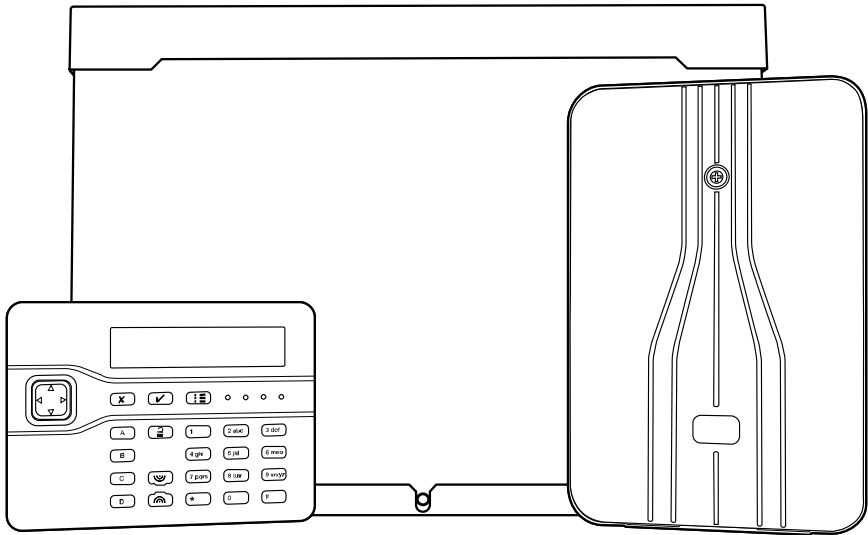


Menvier40

Menvier100

Security System Installation Guide



Issue 2

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Every effort has been made to ensure that the contents of this book are correct. The contents of this book are subject to change without notice.

Printed and published in the U.K.

This manual applies to the Menvier40 and Menvier100 control units with version 4.03 software.

For Your Safety

This book contains several passages alerting you to potential problems or hazards. Each of these are marked by the words **Note**, **Caution** or **WARNING**.

Note: Describes conditions that may affect the proper functioning of the equipment (but will not damage the equipment).

Caution: Describes actions that will physically damage the equipment and prevent its proper function.

WARNING: Describes actions that are hazardous to health, or cause injury or death.

Please pay particular attention to these marked passages.

Terminology

With the introduction of BS8243 and PD6662:2010, Cooper Security have changed the name "panic alarm" to "hold up alarm" and "PA" to "HUA".

Other Publications for the Menvier40 and Menvier100:

The following guides are available from the Cooper Security website:

www.coopersecurity.co.uk

Quick User Guide	Brief instructions for setting and unsetting alarm systems based on Menvier40/100/300 control units.
Menvier40/100/300 Engineering Guide	A detailed description of the Installer's programming options.
Menvier40/100/300 Administrator's Guide	Detailed notes for the system administrator of an alarm system based on the Menvier40/100/400.
Web Server Setup Guide	Instructions on how to configure a Windows PC or laptop to use the Menvier40/100/400's built-in web server for installation programming.
Cooper Downloader Quick Guide	Instructions for how to install Cooper Downloader on your PC or laptop, and connect to Menvier40/100/300 Control Units.
Menvier Updater Installation and User Guide	Instructions on how to install Menvier Updater on your PC and use it to update the software on your Menvier40/100/300 control unit.

www.coopersecurity.co.uk

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1. Introduction

The Menvier40 and Menvier100 are control units for hybrid wired/wirefree alarm systems intended for domestic, commercial or industrial use.

Both control units have identical hardware, but the Menvier40 can handle up to 40 zones, while the Menvier100 can handle up to 100 zones. See the *Menvier40/100/300 Engineering Guide* for a list of other software differences.

The Menvier40/100 control unit comprises a steel case containing the control unit PCB (printed circuit board), power supply and space for a backup battery (not supplied).

The control unit PCB provides terminals for a single bus. The bus allows you to connect up to 20 peripheral devices to the Menvier40 and up to 45 peripheral devices to the Menvier100. The bus cabling uses standard four wire alarm cable. The peripheral devices can be any mixture of keypads, zone expanders (for wireless or wired detectors) or remote power supplies.

The control unit PCB also provides a range of connectors for outputs, communicators, and up to 10 FSL (Fully Supervised Loop), 10 2-wire Closed Circuit Loop (CCL) or five 4-wire CC (Closed Circuit) zones.

The control unit uses i-kp01 keypads with software revision 3.02 and above. The keypads allow end users to set and unset the system, and the installer to configure the control unit. The i-kp01 keypad also contains an integral proximity tag reader, allowing end users to control the system without having to remember access codes.

A range of wireless peripherals is available for operation with the wireless expanders. These include a door contact/universal transmitter, a passive infra red detector, smoke detector, external siren, 4 button remote control, and remote radio keypad.

This control unit is designed and approved to be used as part of a Security Grade 3 system. The control unit is also approved to operate as part of a Security Grade 2 system. If you install any radio devices this will limit approval to Security Grade 2 in the ward in which they are used.

Communications

The control unit contains a built-in ATS2 communicator, allowing it to comply with EN50131 at Security Grade 2.

The control unit also provides sockets for an add-on communication module. The available modules are:

i-sd02 (ATS2)	A speech dialler and public switched telephone network (PSTN) module that allows the control unit to send recorded speech messages and report alarm information using standard protocols such as Fast Format, SIA and Contact ID. This module also allows remote maintenance.
i-dig02 (ATS2)	A switched telephone network (PSTN) module that allows the control unit to report alarm information using standard protocols such as Fast Format, SIA and Contact ID. This module also allows remote maintenance.
i-gsm02 (ATS2)	A GSM module that allows alarm reporting, speech messaging and SMS text messaging over the mobile phone network.

Note: Fitting a plug on module disables the internal communicator.

The control unit also provides outputs that can be used to fit a "plug by" communicator.

To be approved at Security Grade 3 use the plug-by communicator outputs to connect the control unit to an ATS4 communicator.

Level Setting or Ward based system

The control unit offers two basic ways of behaving as an alarm system:

Part Setting. In a Part Setting system the control unit can set in one of four ways: either Full set or three varieties of Part Set. In Full set the control unit pays attention to all detectors. In each of the three Part Sets the control unit ignores detectors that do not have the appropriate Part Set attribute.

Ward Based System. In a ward based system the Menvier40 provides the equivalent of 5, smaller, independent alarm systems, called "wards". The Menvier100 provides 10 wards. You can allocate any

zone to each ward. Each zone can also belong to more than one ward. Each ward can have a Full Set level and one Part Set level. During installation the installer can allocate keypads, sounders or outputs to any of the wards.

For a detailed description of the Installer's programming menu please read *Menvier40/100/300 Engineering Guide* available from www.coopersecurity.co.uk.

Installer Programming Interface

Once fitted and powered up, you can program the control unit through any wired keypad connected to the bus cable. The Installer Menu allows you to specify all the operating parameters for an individual installation. Note that setting the time and date is a user function.

If you wish, you can also program the system from a PC or laptop connected to the Ethernet port on the control unit PCB. The control unit contains a web page server, and you can use any web browser to see a complete version of the Installer menu. Please see the "Web Server Setup Guide" for more instructions.

In addition, it is possible to connect a PC or laptop to the mini USB port on the control unit PCB and use Cooper Security's Downloader software to program the control unit.

Note: Some programming options can make the installation non-compliant with EN50131. The relevant options are noted in the "Installer Menu" section of the *Menvier40/100/300 Engineering Guide*.

About this Guide

This guide shows the simple procedure required to physically install the control unit, connect keypads, expanders and power supplies and power up the system for the first time.

When you have completed the physical installation please consult the *Menvier40/100/300 Engineering Guide* for details of configuring the system to meet your customer's requirements. For your convenience page 28 of this installation guide contains a condensed reference table of the Installer menu.

2. Before You Begin

Preparation

Before installation you should carry out a survey of the site. You need to know how many and what kind of detectors will be monitored by the control unit. You also need to assess where any radio expanders must be placed in order to receive radio signals from their detectors successfully.

Radio Site Survey

If you intend to fit radio expanders you should conduct signal strength tests. Cooper Security produce the Scantronic 790r hand held signal strength meter and 734r-01 test transmitter for this purpose. Please read the 790r manual for details.

Please be aware of the following:

- The 790r signal strength meter readings should be used only as an guide when initially checking the site.
- A reading of four green LEDs or higher indicates an acceptable signal strength.
- Once you have installed the alarm system you should put the control unit into the Installer test menu and test the received signal strength from each radio transmitter.
- A signal strength reading of two or more units by the control unit from each transmitter should provide reliable operation in the installed system. (**Note:** if you take the signal strength using Cooper Downloader or the web server while the panel is in user mode then the minimum acceptable signal strength is four units. Ensure that the control unit is in Installer mode when reading signal strengths remotely.)
- When you record the signal strength readings for later inspection, you should record the readings taken from the control unit of the installed system while it is in the Installer Menu.

Please be aware that the signal strength received from a transmitter can change after installation because of local environmental changes. For example, users switching on laptops nearby, or moving metal cabinets from their original position can all affect the signal from a transmitter. Please read Cooper Security publication "Guidance Notes for Wireless Alarm System Installations" obtainable from

www.coopersecurity.co.uk for more information about the factors affecting radio signal strength.

Siting the Control Unit and Wired Zone Expanders

WARNING Ensure that the fixings are strong enough to support the weight of the control unit, its lid and a 17Ah lead acid battery. The total weight of the control unit plus batteries can be up to 12kg.

Do site the unit:

Upright, battery at the bottom. (This does not apply to the wired zone expander.)

Within a protected zone.

Do NOT site the unit:

In the entry or exit zones, or outside the area covered by the alarm system.

Next to electronic equipment, particularly computers, photocopiers or other radio equipment, CAT 5 data lines or industrial mains equipment.

Siting Keypads

If fitting two or more keypads with internal proximity card readers make sure that you place the keypads more than one metre apart from each other. (At less than one meter separation the proximity tag readers in each keypad will interfere with each other.) Remember not to place keypads on opposite sides of the same wall.

Siting Wireless Zone Expanders

Do site the unit:

Upright.

Within a protected zone.

As high as possible. However, do make sure that the unit is on a similar level to the transmitters or receivers.

More than 10m from another radio expander.

Do NOT site the unit:

In the entry or exit zones, or outside the area covered by the alarm system.

Close to or on large metal structures.

Closer than one metre to mains wiring, metal water or gas pipes, or other metal surfaces.

Lower than two metres from the floor (ideally).

Inside metal enclosures.

Next to electronic equipment, particularly computers, photocopiers or other radio equipment, CAT 5 data lines or industrial mains equipment.

Note: Some window glasses, especially those sold as "insulating" or "energy conserving" may be coated with thin metal or conducting films. These glasses are particularly poor at transmitting radio waves.

Guided Tour

CAUTION: All printed circuit boards for the control unit, its expanders and keypads have been tested for Electromagnetic Compatibility (EMC). However, when handling the PCBs you must take the standard precautions for handling static sensitive devices.

Opening the Control Unit Case

To gain access to the interior of the control unit undo the screw at the bottom of the lid. Slide the lid vertically up, then swing the bottom of the lid out before moving the lid down and away from the case.

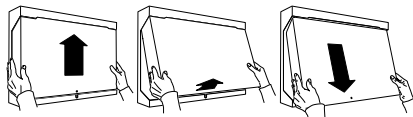


Figure 1 Opening the Control Unit.

WARNING: When connected to the mains with power applied mains voltages are present on the shrouded heads of the terminal screws of the mains connector.

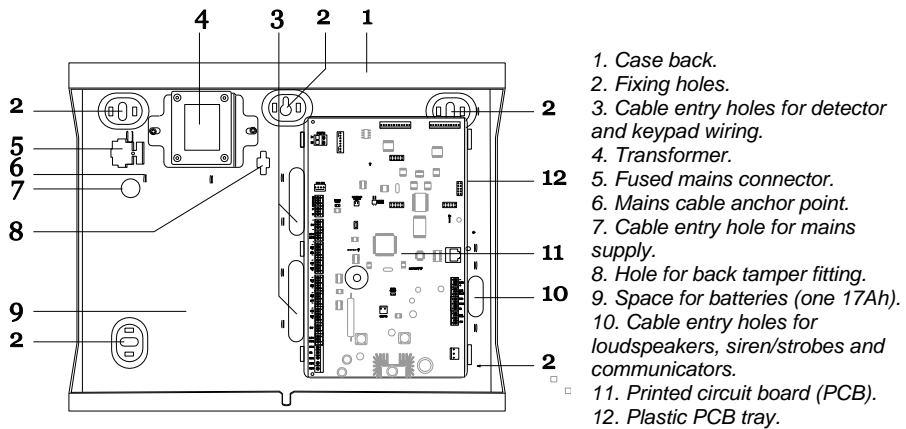


Figure 2 Control Unit

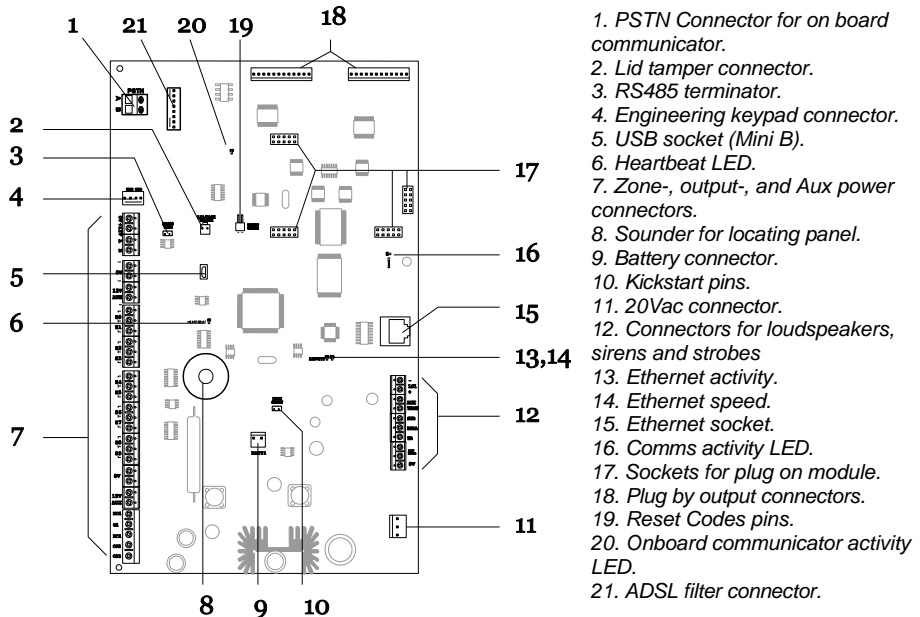


Figure 3 Control Unit Printed Circuit Board

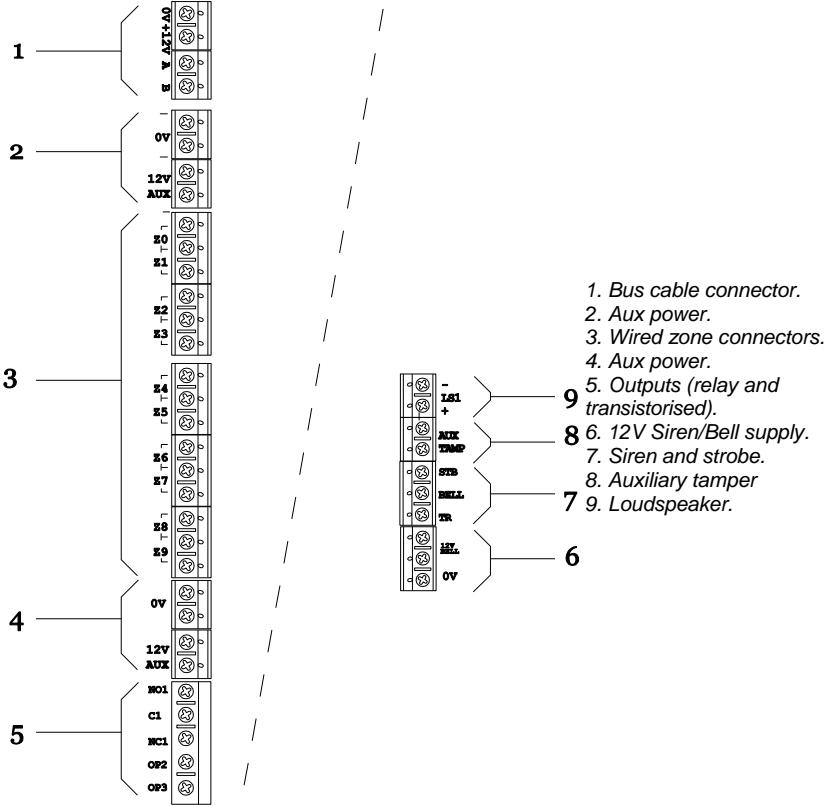
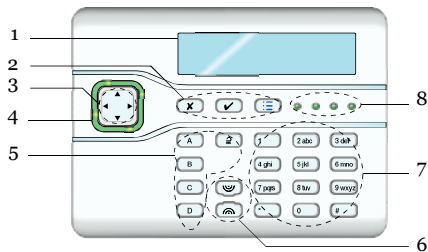


Figure 4 Control Unit Main Connectors

ikp01 Controls and Displays

1. LCD display (2 x 20 characters).
2. Programming keys.
3. Navigation keys
4. Alert LEDs
5. Setting and unsetting keys.
6. Programmable HUA keys.
7. Number/text keys.
8. Set/Unset LEDs.

Figure 5 Controls and Displays

Opening the ikp-01 Keypad

Note: For EN50131-3:2009, 8.7 the keypad is a type B ACE, fixed.

To open the keypad first gently prise off the trim on the front and remove the two screws. Next, carefully lever the front of the keypad (containing the PCB and display) away from the keypad rear housing.

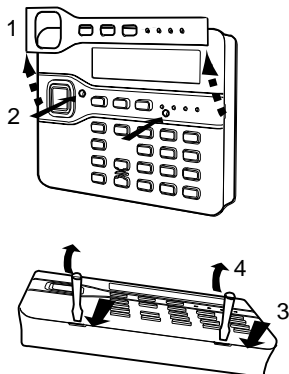
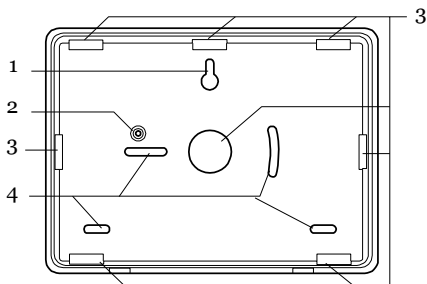
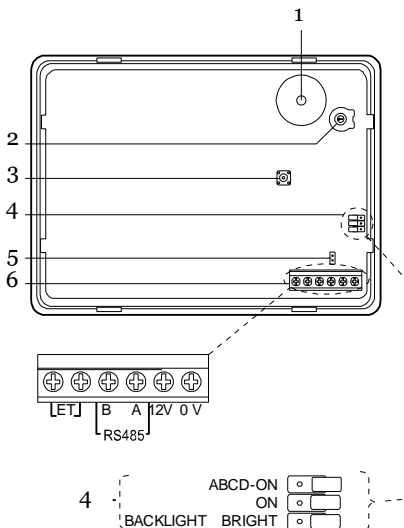


Figure 6 Opening the Keypad



1. Central keyhole.
2. Rear tamper shroud.
3. Cable entry.
4. Fixing holes.

Figure 7 Keypad Rear Housing



1. Sounder.
2. Sounder volume control.
3. Tamper switch.
4. Jumpers for LED function:
5. RS485 termination jumper
6. Connector for control unit (note that the ET terminals are inactive).

Figure 8 Keypad PCB

Opening Expanders

To open any of the expander cases undo the single screw, pull the top of the lid away from the case and then lift out.

Figures 9 and 10 show the interior of the wired and radio expanders.

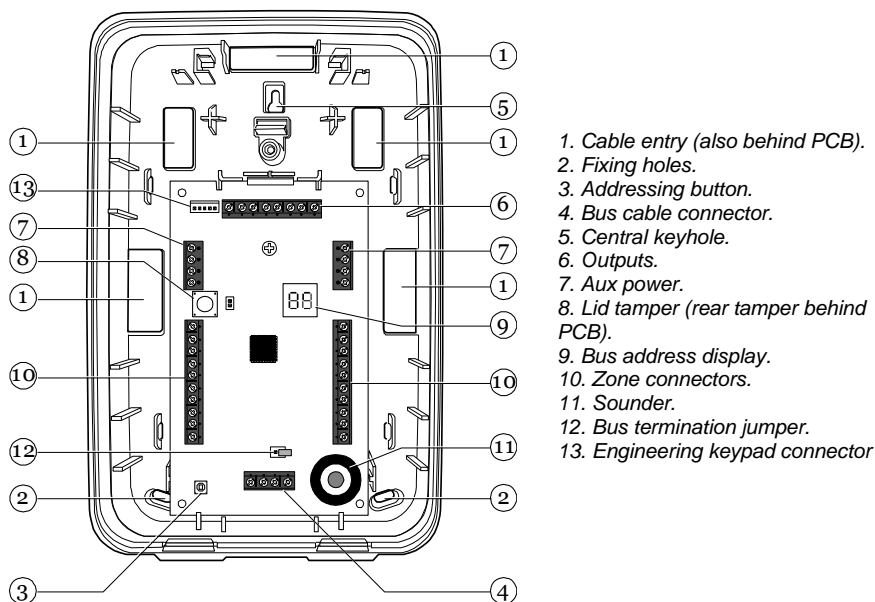


Figure 9 Wired Expander

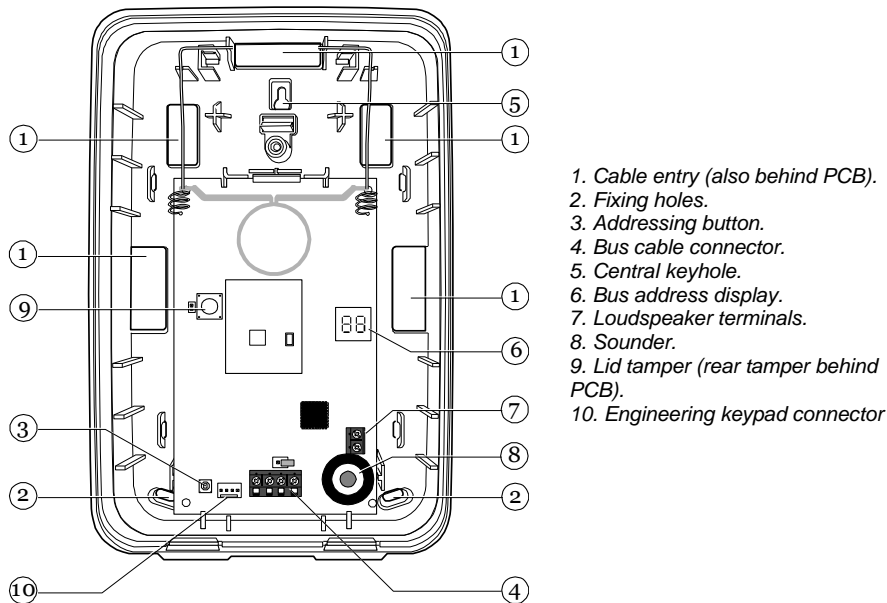


Figure 10 Radio Expander

Power Availability

Before connecting any external devices to the control unit, you must make sure that the control unit can provide sufficient current to power the system during a mains failure for the time required to meet the appropriate standard. PD6662 Grade 3 requires 12 hours (when the control unit is fitted with an ATS4 communicator) including two periods of 15 mins in alarm.

The amount of current available from the control unit depends on the size of battery fitted and its health. The current taken by the control unit PCB, communicator and keypads is given in *Technical Specifications – EN50131-6 Ratings* on page 31.

The following calculation shows a simplified example: in an alarm system with an i-Menvier40 control unit, two i-kp01 keypads, and 20 wired PIRs the system takes the following total quiescent current:

Device	Current
Control unit PCB	120mA
20 x PIRs at 15mA each	300mA
1 x (wired expander)	20mA
2 x i-kp01 at 30mA each (backlights off)	60mA
Siren (quiescent)	25mA
Total	525mA

During an alarm, these figures become:

Device	Current
Control unit PCB	200mA
20 x PIRs at 15mA each	300mA
1 x (wired expander)	20mA
2 x i-kp01 at 60mA each (backlights off)	120mA
Siren (in alarm)	400mA
Total	1040mA

The total amp hours required =

$$(0.525 \text{ A} \times 11.5\text{h}) + (1.040\text{A} \times 0.5\text{h}) = 6.56\text{Ah}$$

Note that for Grade 3 this example assumes that the communicator has its own power supply.

One new, fully charged, 7Ah battery can provide the charge required by the example system and would meet the PD6662 Grade 3 requirements.

Note: All current drawn from the Aux terminals must be included in the overall calculation.

CAUTION: Ensure that the system does not demand more than the maximum current available from the control unit during an alarm, see page 31.

Bus Cabling Requirements

Cable Type

In general, the control unit requires standard 7/0.2 un-screened four core alarm cable for wiring the bus.

For maximum performance in harsh environments use twisted pair cable with a characteristic impedance of 100-120ohms eg: CAT5 or cable designed for RS485.

Use one pair for data lines A and B. Use the other pair for 12V and 0V. For optimum performance the voltage at the keypads and expanders should be greater than 12V.

Screened cable may prove necessary if the installation site has equipment that produces high levels of R.F. (Radio Frequencies). For example, welding equipment is known to produce a large amount of radio interference. If screened cable is required, you should keep to the following guidelines:

1. Avoid earth loops by connecting the screen on the cable to mains earth at the control unit but not at the keypad or expander.
2. The continuity of the cable screen is most important and screens MUST be continuous along the full length of the cable.
3. Where the cable enters any metal enclosure, ensure the screen is isolated from the case.

Cable Segregation

Segregate the bus cabling from any other wiring, such as mains supply cables, telephone cables, computer network cables and R.F. cables. Use cable ties to keep cables separated.

Keep the bus cable clear of cables supplying sounders, extension loudspeakers or any other high current devices.

Cable Configuration and Length

You can connect up to 20 devices to the control unit bus on a Menvier40, or 45 on a Menvier100. You may connect the devices either in daisy chain (serially), or in star

(parallel) configuration at the control unit connector.

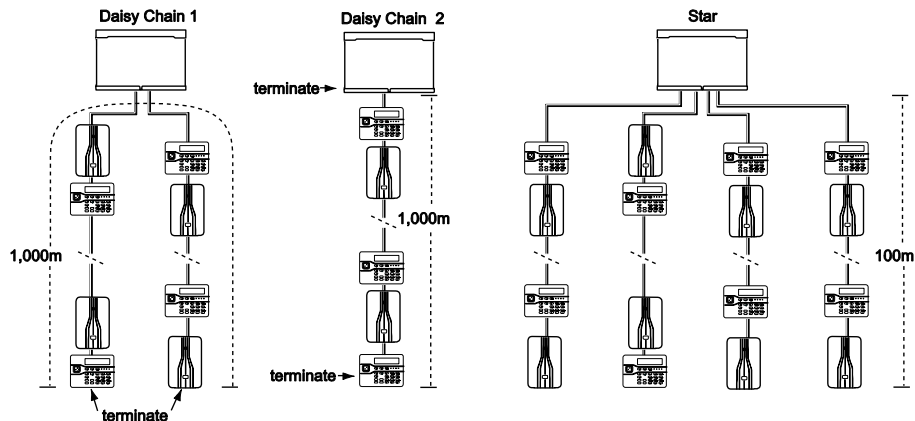


Figure 11 Bus Wiring Configurations

For star configurations the cable length from control unit to the most distant bus device should be kept short, and should not exceed 100m. There should be no more than four arms in the star.

For a daisy chain configuration the total cable length should not exceed 1,000m.

Bus Termination

The control unit bus uses the RS485 interface. Because of this the ends of the line in some configurations may be terminated to improve performance in electrically noisy environments or where there are long cable runs. The control unit, expanders and keypads have a termination link on their PCBs (see 3 in Fig 3 for the control unit and 5 in Fig 8 for the keypad). Fitting a jumper to the pins adds a termination to the cable.

In a daisy chain configuration fit the termination jumpers in the devices at each end of the chain (see Fig 11).

In a star configuration:

If there are only two arms on the star then this is the same as a daisy chain configuration (see "Daisy Chain 1" in Figure 11). If required fit the termination jumper at the devices on the end of each arm.

If there are more than two arms AND two cables are long while the remaining cables are short (less than 10m) then it is possible to terminate at the two devices on the ends of the long cables.

If there are more than two arms BUT each cable is more than 10m then **DO NOT** fit the termination jumpers on any of the devices.

Voltage Drop

In order for the system to work correctly, the voltage at each device must NOT drop below 10.5V even when running on the standby battery. Cooper Security recommend that the voltage at each device should stay above 12V.

Standard 7/0.2 alarm cable has a resistance of 8 Ohms per 100m per core. The voltage drop is calculated using the following formula: $V \text{ Drop} = \text{Current drawn} \times \text{cable length} \times 0.08 \times 2$.

Table 1 shows the voltage drop against the current drawn and cable length.

The shaded area shows where the voltage drop would cause the bus voltage to fall from 13.8V to below 12.0V when using a single core.

Table 1. Voltage Drop

Current Drawn	Cable Length (Standard 7/0.2 alarm cable)									
	10m	20m	30m	40m	50m	60m	70m	80m	90m	100m
60mA	0.10V	0.19V	0.29V	0.38V	0.48V	0.58V	0.67V	0.77V	0.86V	0.96V
80mA	0.13V	0.26V	0.38V	0.51V	0.64V	0.79V	0.90V	1.02V	1.15V	1.28V
100mA	0.16V	0.32V	0.48V	0.64V	0.80V	0.96V	1.12V	1.28V	1.44V	1.60V
120mA	0.19V	0.38V	0.58V	0.79V	0.96V	1.15V	1.34V	1.54V	1.74V	1.92V
140mA	0.22V	0.45V	0.67V	0.90V	1.12V	1.34V	1.57V	1.79V	2.02V	2.24V
160mA	0.26V	0.51V	0.77V	1.02V	1.28V	1.54V	1.79V	2.05V	2.30V	2.56V
180mA	0.29V	0.58V	0.86V	1.15V	1.44V	1.73V	2.02V	2.30V	2.59V	2.88V
200mA	0.32V	0.64V	0.96V	1.28V	1.60V	1.92V	2.24V	2.56V	2.88V	3.20V
220mA	0.35V	0.70V	1.06V	1.41V	1.76V	2.11V	2.46V	2.82V	3.17V	3.52V
240mA	0.38V	0.79V	1.15V	1.54V	1.92V	2.30V	2.69V	3.07V	3.46V	3.84V
260mA	0.42V	0.83V	1.25V	1.66V	2.08V	2.50V	2.91V	3.33V	3.74V	4.16V
280mA	0.45V	0.90V	1.34V	1.79V	2.24V	2.69V	3.14V	3.58V	4.03V	4.48V
300mA	0.48V	0.96V	1.44V	1.92V	2.40V	2.88V	3.36V	3.84V	4.32V	4.80V
320mA	0.51V	1.02V	1.55V	2.05V	2.56V	3.07V	3.58V	4.10V	4.61V	5.12V
340mA	0.54V	1.09V	1.63V	2.18V	2.72V	3.26V	3.81V	4.35V	4.90V	5.44V
360mA	0.58V	1.15V	1.73V	2.30V	2.88V	3.46V	4.03V	4.61V	5.18V	5.76V
380mA	0.61V	1.22V	1.82V	2.43V	3.04V	3.65V	4.26V	4.86V	5.47V	6.08V
400mA	0.64V	1.28V	1.92V	2.56V	3.20V	3.84V	4.48V	5.12V	5.76V	6.40V
420mA	0.67V	1.34V	2.02V	2.69V	3.36V	4.03V	4.70V	5.38V	6.05V	6.72V
440mA	0.70V	1.41V	2.11V	2.82V	3.52V	4.22V	4.93V	5.63V	6.34V	7.04V
460mA	0.74V	1.47V	2.21V	2.94V	3.68V	4.42V	5.15V	5.89V	6.62V	7.36V
480mA	0.79V	1.54V	2.30V	3.07V	3.84V	4.61V	5.38V	6.14V	6.91V	7.68V
500mA	0.80V	1.60V	2.40V	3.20V	4.00V	4.80V	5.60V	6.40V	7.20V	8.00V
520mA	0.83V	1.66V	2.50V	3.33V	4.16V	4.99V	5.82V	6.66V	7.49V	8.32V
540mA	0.86V	1.73V	2.59V	3.46V	4.32V	5.18V	6.05V	6.92V	7.78V	8.64V
560mA	0.90V	1.79V	2.69V	3.58V	4.48V	5.38V	6.27V	7.17V	8.06V	8.96V
580mA	0.93V	1.86V	2.78V	3.71V	4.64V	5.57V	6.50V	7.42V	8.35V	9.28V
600mA	0.96V	1.92V	2.88V	3.84V	4.80V	5.76V	6.72V	7.68V	8.64V	9.60V

Reducing Voltage Drop - Method 1:

Double up the supply connections (12V and 0V), which will halve the resistance on each core and therefore halve the voltage drop. When using Table 1 to calculate the expected voltage drop, simply divide the voltage drop for a single core by two.

Reducing Voltage Drop - Method 2:

Supply the detection devices from the Aux output on separate cores. This is the preferred method of reducing voltage drop as detectors generally operate at lower voltages (9.5V). When using this method, the network cable must have at least two spare cores.

Remote Power Supplies

When you cannot reduce voltage drops by method 1 or 2, or the demand on the control unit power supply exceeds its capacity (see Technical Specifications – page 31), you should install one or more remote power supplies. The supply must have a "floating zero Volt rail" if connected to the network, otherwise an earth fault will occur. Cooper Security recommend the EXP-PSU. When installing a remote power supply, fit it close to the equipment that it is powering.

Figure 12 shows the recommended method of connecting a remote power supply.

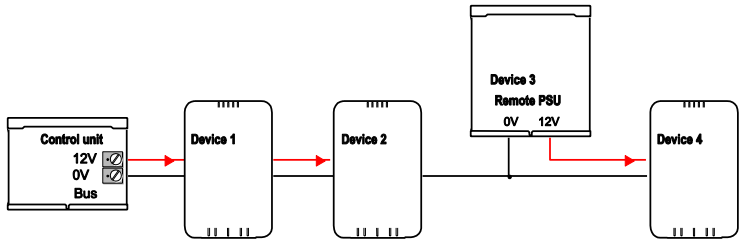


Figure 12. Connecting Remote Power Supply Units

3. Installation

Note: The installation steps listed below assume that you have already decided on the required number and location for all keypads, expanders and power supplies.

Caution: Static Electricity

Like many other electronic products, the control unit, keypads and expanders contain components that are sensitive to static electricity. Try not to handle their PCBs directly. If you must handle a PCB, take the standard precautions against damage by static electricity.

Step 1. Fit the Control Unit Case

Mark Fixing Points and Back Tamper

To prevent access to the inside of the control unit through the holes in the rear of the case you must mount the control unit on a wall or other flat surface.

The case must be vertical, as shown in Figure 2.

Locate and mark the position of at least three fixing holes. Figure 2 shows the fixing holes and cable entries.

WARNING Ensure that the wall is strong enough to support the weight of the control unit, its lid and 17Ah lead acid battery. The total weight of the control unit plus batteries can be up to 11kg.

Also, mark the position where the lid/back tamper bracket touches the wall. There must be enough space around this point to fit the supplied tamper shroud (see Figure 14).

Fitting Plastic Feet and Tamper Sleeve

The control unit is supplied from the factory with four plastic feet and one plastic tamper sleeve. Fit these onto the outside of the case back, as shown in Figure 13. Fit feet only to the fixing holes that you intend to use.

Fitting tamper Shroud

The tamper shroud is intended to prevent an intruder sliding a tool between case and wall to interfere with the tamper bracket. When fitted the shroud must surround the

point where the tamper bracket touches the wall. see Figure 14

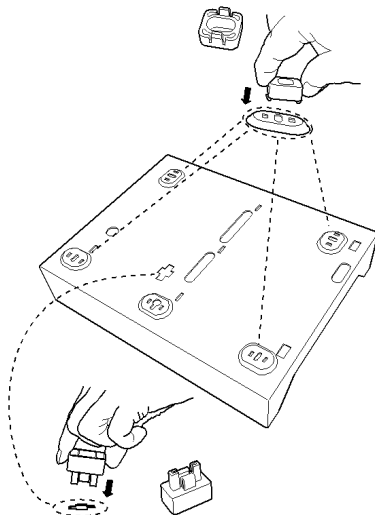


Figure 13 Fitting Feet and Tamper Sleeve.

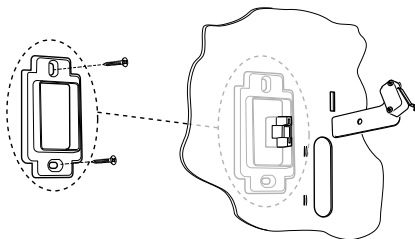


Figure 14 Fitting Tamper Shroud.

Fitting Case Back to Wall

Use No14/M6 screws at least 50mm long, inserted into wall anchors appropriate for the type of wall.

WARNING Ensure that the fixings are strong enough to support the weight of the control unit, its lid and 17Ah lead acid battery. The total weight of the control unit plus batteries can be up to 11kg.

Protect the unit from dust and drilling debris when drilling the fixing holes.

Fitting the PCB

The control unit PCB is supplied in a separate carton designed to store it safely if you wish to fit the pcb some time after you have fitted the case. Clip the plastic PCB

carrier into the holes provided, see Figures 15 to 17.

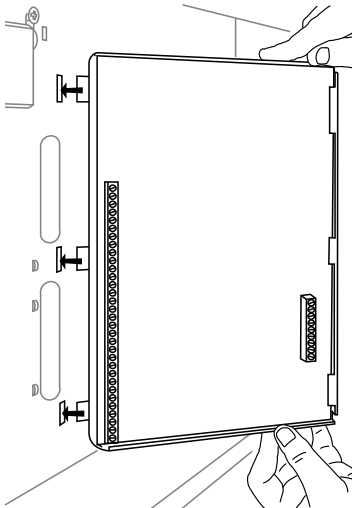


Figure 15 Insert Tabs

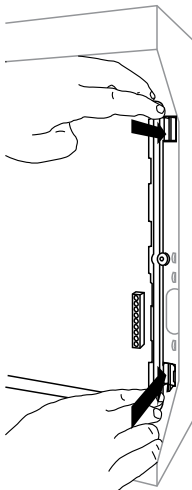


Figure 16. Push Home Clips

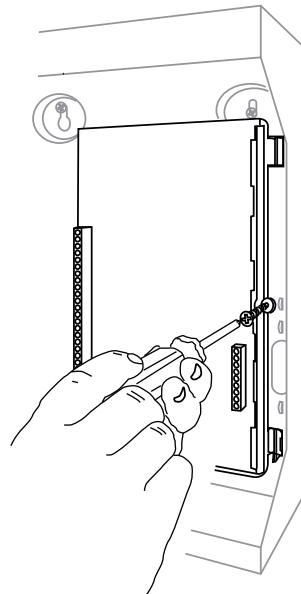


Figure 17 Fit Securing Screw

When the PCB is in place, connect the wires from the transformer to the 20Vac connector on the PCB (11 in Figure 3).

Installing the Lid/Back Tamper

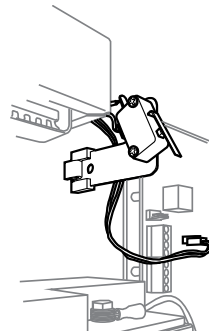


Figure 18 Lid/Back Tamper

Fit combined lid/back tamper bracket and switch (provided). Ensure that the switch is oriented as shown in Figure 18.

Connect the lead from the switch to the back tamper connector on the PCB (see 2 in Figure 3).

Note that to be approved at Security Grade 3 you must fit the lid/back tamper.

Step 2. Run Bus Cable

Please read "Cabling Requirements on page 8.

Step 3. Fit and Connect the Keypad(s)

Siting the Keypad(s)

Do site the keypad(s):

Within the area protected by the alarm system.

At a convenient height and location for the user.

Out of sight of potential intruders.

Do NOT site the keypad(s):

Next to electronic equipment, particularly computers, photocopiers or other radio equipment, CAT 5 data lines or industrial mains equipment.

Where the cable run from the control unit will be longer than 100m (see Cable Configuration and Length).

Note: Do not site two or more keypads closer than one metre together, otherwise their prox readers will interfere and be unable to read tags.

Fitting Keypads

Use M4 25mm countersunk screws in at least three fixing holes when mounting the back of the keypad on the wall.

For Grade 3 systems drill out the hole for the back tamper using a 7mm bit (see Figure 19).

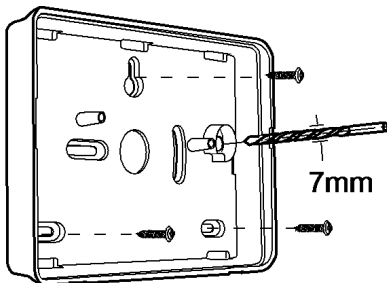


Figure 19 Screw i-kp01 Back Box to Wall

Keypad Connection

Figure 20 shows the wiring connections at the keypad and control unit.

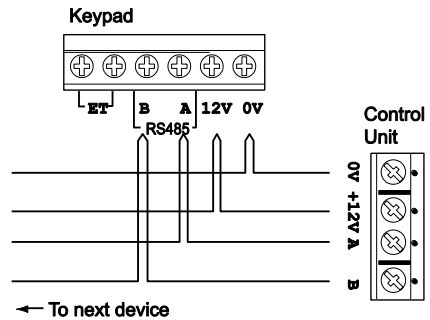


Figure 20 Connecting a Keypad to the Bus

Keypad Addressing

The control unit assigns addresses to all devices connected to the bus cable. You must start this process off once all bus devices are connected, during the initial power up. See page 22 for instructions.

Backlight Control

You can control the appearance of the keypad backlights and set/unset LEDs by fitting links over the appropriate jumpers on the keypad PCB (see Figure 8 on page 6 for the position of the jumpers).

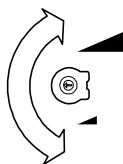
The jumpers have the following functions:

ABCD-ON	The set/unset LEDs are disabled. See Note.
ABCD-ON	The set/unset LEDs shows the setting status of the system. (Full set is the left hand LED.) (see Note overleaf)
BL- BRIGHT	The key backlights are disabled. They will glow briefly for five seconds when a user presses a key.
BL- BRIGHT	The key backlights glow all the time at normal intensity.
BL- BRIGHT	The keypad backlights glow all the time, extra bright.

Note: To comply with PD6662:2010 the set/unset LEDs should be disabled.

Tone Volume

To alter the volume of non-alarm tones from the keypad adjust the keypad sounder volume control (2 in Fig 8):



Louder

Note: This control changes the volume of non-alarm tones (for example Exit/Entry tone). The volume of alarm tones is fixed.

Softer

Engineering Keypad

An Engineering Keypad is a modified i-kp01 that can be plugged into a dedicated connector on the control unit PCB (see item 4 on Figure 3) or any of the expanders (see 13 on Figure 9 or 10 on Figure 10). An Engineering Keypad does not need to be addressed, and will always be recognised by the control unit as an Engineering Keypad.

You can use an Engineering Keypad to program the system without being tied to any of the installed keypads. If you wish to move an Engineering keypad from one connection point to another then you can do so without removing power from the system.

Step 4. Fit and Connect Expanders

Both wired and radio expanders are supplied in the same plastic case. Use M4 25mm countersunk screws in all three fixing holes when mounting the back of the case on the wall. See Figures 9 or 10 for the position of fixing holes and cable entries.

Note that radio expanders are not approved for Security Grade 3 systems.

Connecting an Expander to the Bus

Both wired and radio expanders provide a connector for the bus at the bottom of their PCBs (item 4 on Figures 9 and 10) .

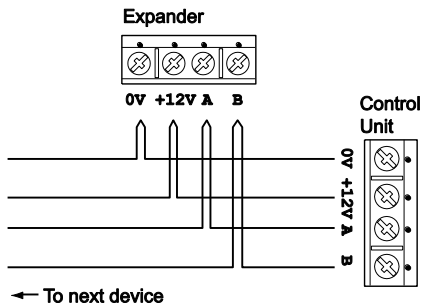


Figure 21 Wiring Expanders

Addressing Expanders

The control unit assigns addresses to all devices connected to the bus cable. You must start this process off from the Installer Menu, during the initial power up. See page 22 for instructions.

Expander Loudspeakers

During normal operation loudspeakers on expanders repeat setting and entry tones for the ward that the expander is allocated to. During an alarm the loudspeakers repeat alarm tones.

Each loudspeaker draws up to 280mA in operation. If there is more than one expander loudspeaker then the bus may not be able to supply sufficient current during an alarm.

Note that you must enable entry exit tones from the expander loudspeakers from Installer Menu.

Step 5. Connect Control Unit to Mains

WARNING: ENSURE THAT THE MAINS SUPPLY IS DISCONNECTED AND ISOLATED BEFORE MAKING ANY MAINS CONNECTIONS. All mains electrical connections must be carried out by a qualified electrician and must comply with the current local regulations (e.g. IEE).

Mains Cabling

Note: To avoid mains interference, the mains cable must enter the control unit through its own cable entry hole (7 in Fig 2) and must not be mixed with other cables.

Mains Connection

Figure 22 shows the mains connection. Connect to a suitable supply using a double pole disconnect (isolation) device in accordance with EN60950-1.

Caution: Do not apply power at this point.

Anchor the mains cable with a strain-relief tie. There is a eye located near the mains cable entry hole for this purpose.

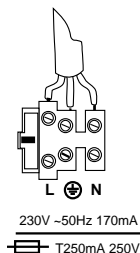


Figure 22 Mains Connection

Step 6. Connect Wired Zones

The control unit and the wired expander connectors can be used for either four wire Closed Circuit (CC) detectors, two wire CC detectors, or two wire Fully Supervised Loop (FSL) detectors.

Four Wire Closed Circuit Connections

Figure 23 shows the wiring for four wire CCL zones on the control unit. Figure 24 shows the wiring for four wire CCL zones on the wired expander. Note that the connections are different on the expander compared to the control unit.

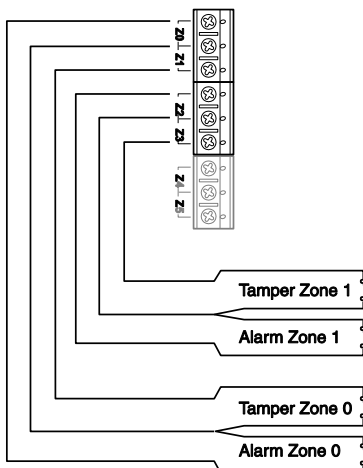


Figure 23 Control Unit CCL Zone Wiring

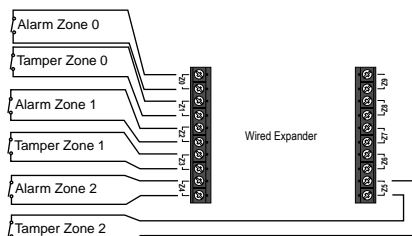


Figure 24 Wired Expander CCL Zone Wiring

Two-Wire Closed Circuit Connections

With version 4.02 software you can connect two-wire CCL detectors to each pair of zone terminals. To specify the zone wiring type use the *Installer Menu – System Options – Wire Zone Type* option and select "2-wire CC".

If required you can use one pair of zone terminals as a common tamper, provided you program that zone with the type "Tamper" from the Installer Menu.

Fully Supervised Loop Connections

Figure 25 shows the wiring connections for FSL zones on the control unit. Note that the resistance values shown are examples.

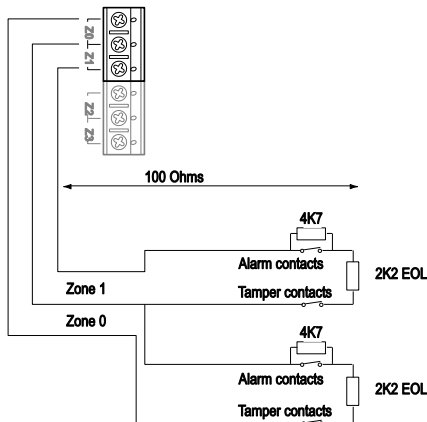


Figure 25 FSL Zone Wiring – Control Unit

Figure 26 shows the wiring connections for FSL zones on the expander. Note that the connections are different on the expander compared with the control unit.

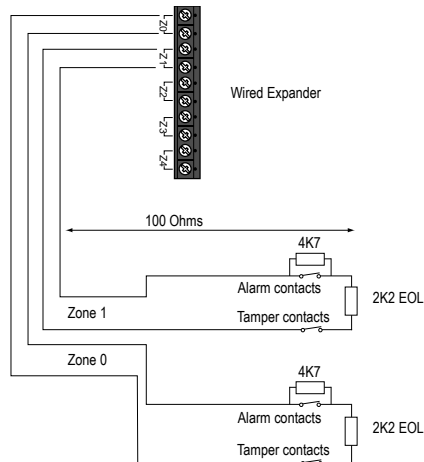


Figure 26 FSL Zone Wiring - Expander

The allowed values for Alarm Contact/End of Line resistors are: 4k7/2k2, 1k0/1k0, 2k2/2k2, or 4k7/4k7.

Note: Use the same pair of values for ALL FSL wired circuits on the control unit. Each wired expander can use a different pair of resistor values, but ALL circuits on an expander must have the SAME values.

When programming select the FSL resistor values for the control unit in *Installer Menu - System Options - Wired Zone Type*. To select the resistor values for a wired expander use

Installer Menu – Detectors Devices – Wired Expanders - Edit Expander.

If you wish to connect two or more detectors to a FSL zone, Figure 27 shows the connections required.

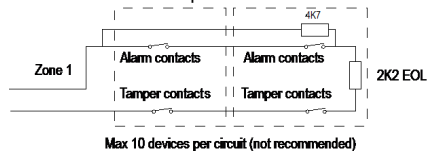


Figure 27 Wiring Two Detectors per Zone FSL.

Figure 28 shows an example of wiring double doors with two door contacts to one FSL zone. Each door contact is a reed switch, connected between the outer terminals. The inner (shaded) terminal is not connected, and provides a spare terminal.

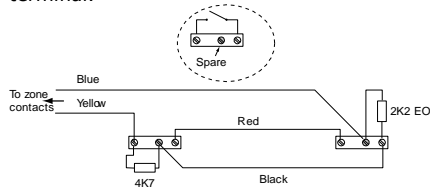


Figure 28 Example: Wiring Two Door Contacts to One FSL Zone.

Figure 29 shows an example of wiring a trouble/masking output using the “3-resistor method”. Note that you must use 2k2 and 4k7 resistors as shown. Other values will not work (See *System Options – Masking* in the Menvier40/100/300 Engineering Guide).

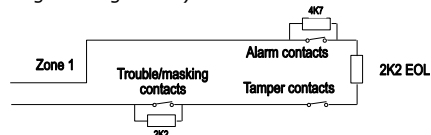


Figure 29 Example: Wiring a Trouble/Masking Zone, 3 Resistor Method.

Step 7. Connect Wired Outputs

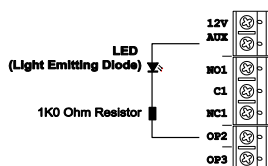
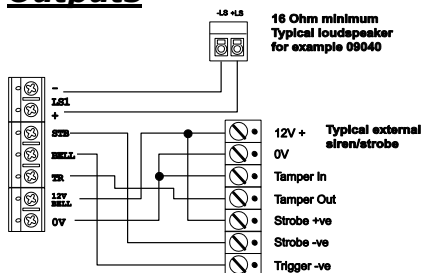


Figure 30 Connecting Wired Peripherals

Control Unit Wired Outputs

The control unit PCB provides three connectors for wired outputs. Output 1 is a voltage free relay output. Outputs 2 and 3 are driven by transistors, and are capable of sinking a maximum 500mA when active. By default outputs 2 and 3 are 0V when active, +12V when inactive. If you wish to reverse the polarity of these two outputs see *Changing the Polarity of a Wired Output* in the *Menvier40/100/300 Engineering Guide*.

Figure 30 shows an example of using the wired outputs to drive an indicator LED.

Wired External Sounders (Optional)

Wired external sounders differ in their methods of connection. Figure 30 shows an example of a general method of using the outputs to connect a wired sounder.

It is possible to program the TR terminal on the control unit (see item 7 in Figure 4) as either CC or FSL. Use *Installer Menu – System Options – Panel Tamper Rm*. By default the terminal is CC. If you program the TR terminal as FSL then make sure you connect a 2k2 resistor in series with the wire to the sounder.

Note: If you do not wish to connect a wired external sounder then leave TR programmed as CC and make sure you link

TR to 0V on the control unit. This prevents the control unit reporting Bell Tamper unnecessarily.

Auxiliary Tamper

The control unit provides two "AUX TAMP" terminals that you can connect to external equipment in order to detect a tamper. The terminals offer CCL connection only. If you do not intend to use them then connect the terminals together with a short wire link.

If you wish to use FSL wiring for an auxiliary tamper then it is possible to use a FSL wired zone programmed as type "Tamper (10)".

Wired Outputs on Expanders

Each EXP-W10 wired expander provides connections for up to four transistor driven outputs. By default the outputs are 0V when active, +12V when inactive. If you wish to reverse the polarity of these two outputs see *Changing the Polarity of a Wired Output* in the *Menvier40/100/300 Engineering Guide*. Figure 31 shows an example of using an expander output to drive an LED.

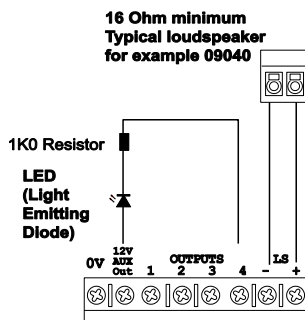


Figure 31 Using Wired Expander Outputs.

Wired External Sounders on Expanders

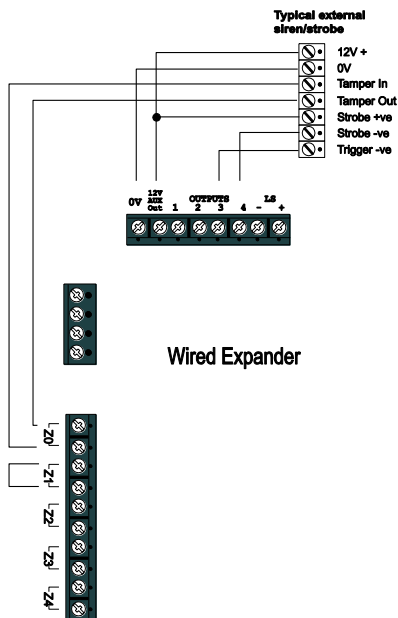


Figure 32 Wiring External Sounder to Expander

Figure 28 shows a general method of using the outputs on a wired expander to connect a wired external sounder.

Connect the tamper wiring to an unused zone connection on the expander. For 4-wire CC zones use the alarm contacts only and link the tamper contacts together with a short length of wire.

In the Installer Menu, program the zone with a type of "Tamper". Program the outputs used to trigger the siren and strobe with the appropriate output types. See the *Menvier40/100/300 Engineering Guide* for more details.

Single Wire Tamper Return

If the external sounder provides a single -TR connection, then use the zone type "Tamper Return" for the zone terminals which receive the connection at the expander.

FSL wiring. Connect -TR to the left terminal of a zone connector (see Figure 33). (The left hand terminal is the one next to the "Z" on the terminal label.) The maximum length of wire is 50m when using 2k2/4k7 or 4k7/4k7 FSL wiring and a single

core of standard 6-core alarm cable. Fit EITHER a 2k2 resistor if using 2k2/4k7 FSL, OR a 4k7 resistor if using 4k7/4k7 FSL. Do not use any other FSL resistor combinations.

CC wiring Cooper Security does NOT recommend that you use CC wiring for this application. The maximum length of wire allowable is only 6m. Instead Cooper Security recommend using FSL wiring, as described above.

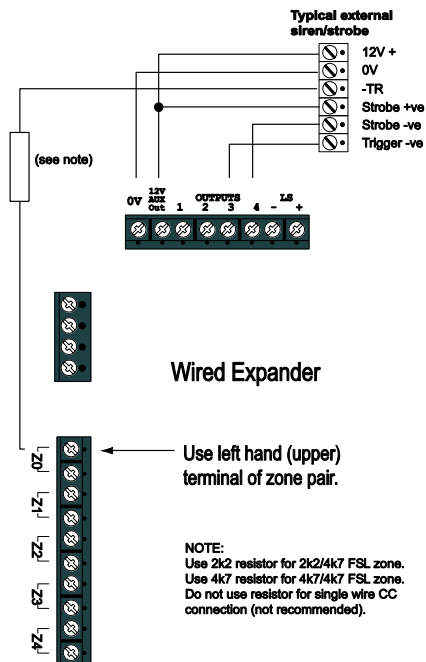


Figure 33 Wiring -TR from External Sounder to a Zone on the Expander.

Remote Loudspeakers (Optional)

If you wish to add a 16 Ohm wired Loudspeaker unit, then connect it as shown in Figures 30 or 31. The control unit provides connections for one loudspeaker. Expanders also provide connections for only one loudspeaker. Do not connect another loudspeaker in parallel. You may connect another loudspeaker in **series**, but this will decrease the maximum volume from the speakers.

Note: Loudspeakers are not warning devices as described by EN50131-4. Although loudspeakers may mimic alarm

tones, they also give alert tones and other progress tones when setting and unsetting the alarm system.

Step 8. Connect the Internal Communicator

The control unit has an internal communicator on its main PCB. This is an auto-dialling modem.

If necessary, a standalone communication device can be connected through a wiring harness to interface pins on the main PCB (this is known as a plug-by communicator, see page 21).

The communicator can be used for:

- Transmitting alarm signals to alarm receiving equipment at a central monitoring station using Scancom Fast Format, Scancom SIA (Security Industry Association) or Contact ID.
- Connecting to a PC based at a remote engineering centre. Using Cooper Downloader software, the remote PC can upload and download system parameters (including the event log and diagnostics), set and unset the alarm system, and carry out other special functions.

Telephone Line

Ideally, the internal communicator should be connected to an ex-directory line used exclusively for alarm communications.

Line Monitoring for the Internal Communicator

The control unit provides a line monitoring function to check that a telephone line connected directly to the control unit is working, and to indicate a line failure if it is not. While enabled, this function continually checks the line voltage to ensure that the line is connected. If it detects a failure, the system gives the Line Fault Response selected in the Installer Menu.

Test Calls

The control unit can be programmed to make test report calls to an ARC. "Static" test calls can be programmed to occur at set times or intervals. "Dynamic" test calls occur 24 hours after the last call made by the unit. See the *Menvier40/100/300 Engineering Guide* for details on how to program these functions.

Statutory Information

Applications

The built-in communicator is suitable for connection to the following types of networks:

- (a) Direct exchange lines (PSTN) supporting DTMF (tone) dialling.
- (b) PABX exchanges (with or without secondary proceed indication).

Note: The built-in communicator is not suitable for connection as an extension to a pay-phone or to 1 + 1 carrier systems.

Approval

The built-in communicator is manufactured to meet all European Economic Area telecommunication networks requirements. However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

The built-in communicator has been approved for the following usage:

- (a) Automatic call initialisation.
- (b) Operation in absence of indication to proceed.
- (c) Automatic dialling.
- (d) Modem.
- (e) Serial connection.
- (f) Multiple repeat attempts.
- (g) Line status monitoring.

Usage other than approved usage or failure to comply with the installation and programming instructions may invalidate any approval given to the apparatus if, as a result, the apparatus ceases to comply with the standards against which approval was granted. Note the approval label on the main PCB.

In the event of problems you should contact your equipment supplier in the first instance.

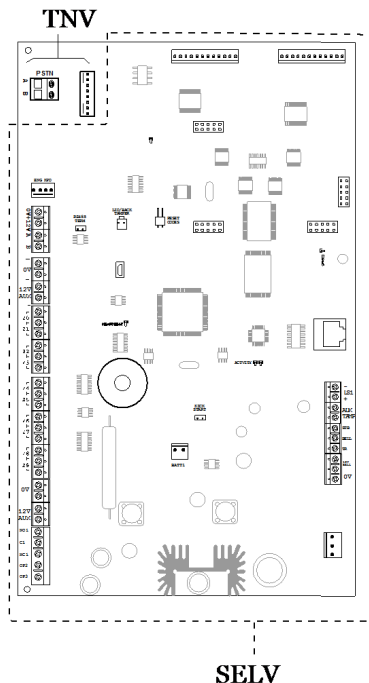
Ringer Equivalence Number

The Ringer Equivalence Number (REN) of the built-in communicator is 1. As a guide to the number of items that can be simultaneously connected to an exclusive line, the sum of the REN values should not exceed 4. A standard telephone (as provided, for example, by BT in the UK) has a REN value of 1.

Safety Notice

Figure 34 identifies connectors for Safety Extra-Low Voltage (SELV) and Telecommunications Network Voltage (TNV) circuits on the control unit's main PCB. These terms are used in accordance with the definitions in Safety Standard EN60 950.

The Installer must ensure that TNV terminals are connected **only** to other circuits designated as TNV circuits (for example, the PTSN) and that SELV terminals are connected **only** to other circuits designated as SELV circuits. Strict adherence to the installation instructions will ensure that the equipment continues to comply with the safety regulations to which it was approved.



TNV - Telephone line connector.

SELV – All other connectors.

Figure 34 SELV and TNV connectors

Connecting the Telephone Line

Connecting the telephone line directly to the terminals on the internal communicator, or indirectly through other apparatus, can produce hazardous conditions on the

telephone network. Always seek advice from a competent telephone engineer if in any doubt about connecting to these terminals.

Example – connecting a line in the UK:

The internal communicator must be connected to the telephone network by:

- a) If the wiring is owned by British Telecom:
 - British Telecom.
- b) If the wiring is not owned by British Telecom, one of:
 - (i) British Telecom.
 - (ii) The authorised maintainer.
 - (iii) A professional Installer, after 14 days written notice to the authorised maintainer.

To connect the telephone line (see Figure 35):

- (i) Using a two-core telephone cable, strip off 5mm and feed the cable through one of the entries (marked "10" in Fig. 2) in the rear of the control unit. Connect the two cores to terminals A and B on the main PCB.
- (ii) Connect the other end of the two cores to the corresponding terminals on the BT master box.



Figure 35 Connecting the Internal Communicator

Fit ADSL Filter

If the telephone line is being shared by a broadband service then you should fit a broadband filter to the line. Cooper Security provide the ADSL01 filter that plugs onto pins provided for the purpose on the main circuit board of the control unit (see 21 on Figure 3). Figure 36 shows how to fit the filter.

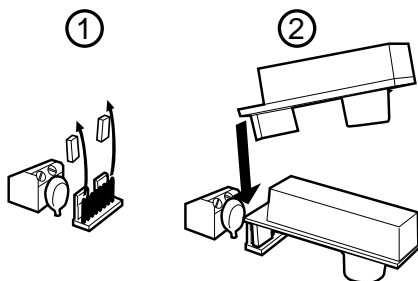


Figure 36 Fitting the ADSL01 Filter.

Note: If you remove the ADSL01 filter then re-fit the jumpers to the outermost pairs of pins. If you fail to re-fit the jumpers the internal communicator will not connect to the phone line.

Step 9. Fit a Plug-By Communicator

The control unit can be connected to a separate communicator or speech dialler (for example, the Menvier SD2). Figure 37 shows the connections provided by the communications wiring harness. Note that the output types shown in Figure 37 are the Factory default types. See the *Menvier40/100/300 Engineering Guide* for details on how to change the defaults.

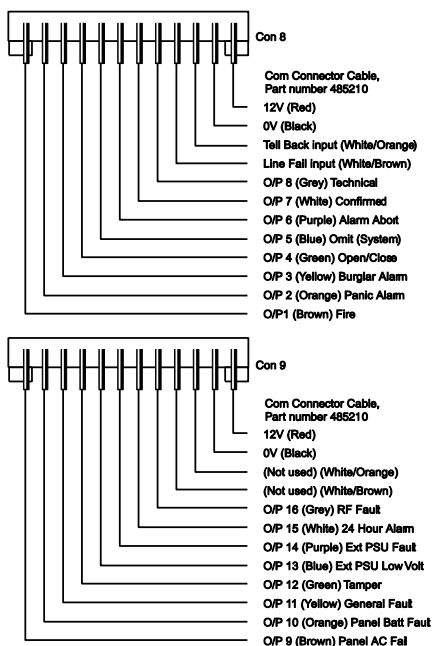


Figure 37 Plug-By Communicator Wiring

Note: Comms O/P4 will be active when the system is unset. This is normal.

To fit a communicator, follow the instructions below.

Caution: Follow the instructions in the order shown, or you may damage the control unit and/or communicator.

1. Disconnect mains power from the control unit, remove the case lid, and disconnect the battery (if the system has already been installed).
2. Make any necessary connections from the communicator to the communication wiring harness. The default is a 12V positive voltage when the output is inactive.

Refer to the next section if you are using a dual-path communicator.

3. Plug the Communication Wiring Harness onto the communications connector on the main PCB.

If the system has already been installed:

4. Re-connect the battery.
5. Fit the case lid.
6. Apply mains power.

7. Test communicator operation.

Note: You will need to speak to the ARC in order to confirm that the communicator has worked correctly.

Line Fail Input

This input is designed to allow a plug by communicator to indicate to the control unit that the communications link has failed. The communicator should have an output capable of applying +12V to the Line Fail input while a line fault is present and 0V when the fault is absent.

Tell Back Input

This input is designed to allow a plug by communicator to indicate to the control unit that the user can reset the system after a system tamper. The communicator should have an output that, when triggered remotely, can apply +12V for at least 100ms to the input. See "Remote Reset (Redcare Reset)" in the Menvier40/100/300 Engineering Guide for more information.

Line Monitoring for a Dual-Path Communicator

If a standalone dual-path (landline and mobile) communication device, such as a RedCARE STU, is connected to the plug-by connector, you need to do the following to obtain correct line fault reporting (this is not necessary if you are using a plug-on module):

1. Wire a control unit output programmed as type "ATS Test" to the ATS Test input of the communicator.
2. Wire the Line Fault output of the communicator to the Line Fault input of the plug-by connector. The communicator must provide +12Vdc to indicate a line fault (for example, if the Line Fault output at the communicator uses a relay, connect the common terminal of the relay to +12Vdc and the normally-open terminal to the Line Fault input of the plug-by connector).

The control unit will generate an "ATE L.F. Single" alert if only one of the networks is not available, or "ATE L.F. All" if both networks are not available.

Step 10. Fit and Connect Battery

Fit a 17Ah Lead Acid battery into the battery compartment in the bottom of the control unit. Use a battery whose case

material has a minimum rating of UL94V-2 in order to comply with EN60950 (this standard applies because of the energy content of 17Ah batteries).

See Figure 38. See page 8 for example calculations of battery requirements.

WARNING 17Ah lead acid batteries weigh 6kg each. Do NOT drop. Ensure that the fixings of the control unit case to the wall, and the wall itself, are strong enough to support the weight of the control unit, its lid and a 17Ah lead acid battery. The total weight of the control unit plus batteries can be up to 11kg.

Connect the battery leads, red to the positive, black to the negative terminals of the battery. Connect the other ends of the leads to BATT (item 9 on Figure 3).

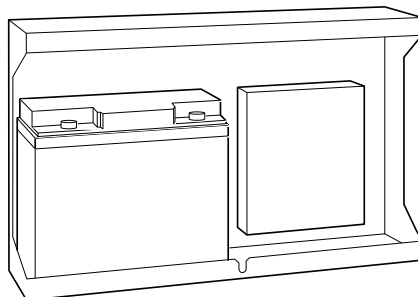


Figure 38 Fitting the Batteries

Note: Connecting the battery without mains power will not start the system. (See "Programming Before Installation" in the Menvier40/100/300 Engineering Guide.)

Step 11. Initial Power-Up

Please see the Menvier40/100/300 Engineering Guide for an explanation of bus addressing.

WARNING: During initial power-up all the keypad sounders, internal loudspeakers and wired sirens MAY give an alarm tone. If you are working at the top of a ladder make sure that the sudden noise does not startle you and cause a fall.

1. Apply mains power to the control unit.

The keypads and internal sounder may give an alarm tone. The heartbeat LED on the control unit PCB (item 6 on Figure 3) starts flashing. The navigation keys on any attached keypad start flashing.

All connected keypads briefly show the software revision of the keypad itself,

followed by the words "Please wait..." for several seconds while the control unit scans the bus. When the control unit has finished scanning the bus the keypads show:

```
Press addr button(s)
on wired keypads
```

2. Press and hold keys A and ✓ simultaneously on the keypad that you wish to use for initial programming.

NOTE: Hold the keys down for at least three seconds.

After a short pause the keypad gives a confirmation tone. The display briefly shows the bus address of the keypad. If there are no other keypads connected to the bus it should be "b1-d51"(bus 1 device 51). Keypads take bus device addresses 51 upwards.

The keypad display then shows:

```
A : Ward mode
B : Part set mode
```

3. Press A or B to select either a Ward based system or a Part Setting system.

The display shows:

```
SYSTEM GRADE
*Grade 3
```

4. Press ▲ or ▼ to show the Security Grades available, for example:

```
SYSTEM GRADE
Grade 2
```

5. Press ✓ to select the security grade you intend to use for the system.

The display shows:

```
WIRED ZONE TYPE
*2-wire FSL 2k2/4k7
```

6. Press ▲ or ▼ to show the range of zone wiring types available, for example:

```
WIRED ZONE TYPE
4-wire CC
```

7. Press ✓ to select the wiring type you intend to use for the wired zones.

Note: This initial choice fixes the wiring type for the control unit and any attached wired expanders. If you wish to use a different wiring type on the expanders then use Installer Menu – Detectors/Devices – Wired Expander after the initial power up to change the wiring type for each expander.

The display shows:

```
INSTALLER EXIT FLTS
Panel lid open
```

Note that the alert LEDs round the navigation key glow red. This is because the control unit lid is off and the tamper is active.

8. Press ✕.

The display shows:

```
INSTALLER MENU
Detectors/Devices
```

9. Press ✓.

The display shows:

```
DETECTORS/DEVICES
Detectors >
```

10. Press ▼.

The display shows:

```
DETECTORS/DEVICES
Address Bus Device>
```

11. Press ✓.

The display shows:

```
Press addr button(s)
on bus devices
```

At this point you must make the control unit allocate an address to each of the connected bus devices, as follows:

12. Go to each bus device. You can visit the devices in any order, but if you visit them in the order you want their address numbers to appear then it will make subsequent programming easier. The control unit assigns the next free bus address to a bus device when you make the device request a bus address.

For keypads:

Hold down keys A and ✓ until the display shows a bus and device number. For example the second keypad would be:

```
b1 d52
```

For expanders:

Open the lid (to make sure that the tamper switch is open) and hold down the addressing button (item 3 on Figures 9 and 10). When you do so the control unit assigns the next free address to that expander. The expander gives a double "beep" confirmation tone and shows its assigned address on the two-digit LED display. Replace the lid.

NOTE:

1. DO NOT request a bus address from two different devices at the same time.
2. EXP-R30 expanders take three bus addresses.

13. When you have visited all the connected bus devices, go back to the keypad and press ✕. The display shows:

```
DETECTORS/DEVICES
Address Bus Device>
```

14. Replace the control unit lid, making sure that the lid tamper closes.

Note: You can set the time and date from within the Installer Menu by using System Options – Set Time & Date.

- At this point you should leave the Installer Menu to save the changes you have made, see below.

Diagnostic LED on Expanders

You may notice the DIAGNOSTIC LED flashing on an expander PCB. The LED gives one, two, three or four flashes a second. Each of these sequences has the following meaning.

No. Flashes Meaning

One	Communication with control unit over bus is OK
Two	No communication over the bus in the last 10 seconds.
Three	No bus address allocated to EXP-PSU
Four	No poll request received from control unit in the last minute.

Transferring to Another Keypad

While in the Installer Menu, you can transfer to any other wired keypad without leaving the Installer Menu. To do this simply go to any other keypad and enter the Installer access code. The new keypad will pick up your position in the Installer Menu. The keypad you have left will briefly display the message “Installer session transferred” for 5 seconds before reverting to the time and date.

Leaving the Installer Menu

If you wish to leave the Installer Menu at any time.

- Press **X** until the display shows the words:.

Leave
installer mode?

- Press **✓** to leave Installer menu. (Press **x** if you do not want to leave the menu.)

The display shows:

Please wait...

After a delay of anywhere between a few seconds to a few 10s of seconds (depending on the number of expanders fitted) the display shows the control unit name, time and date, for example:

Menvier40
12:00 02/01/2010

The system is ready for further programming.

- If the control unit finds a bus device missing, or one with an address that has not been added using the Installer Menu then the display shows, for example:

Found 3, Lost 0
Found W1-02

The top line of the display shows the number of new devices found, and the number of existing devices missing (lost). The bottom line of the display shows the first in the list of found and lost devices. Press **▼** to see any other items in the list.

- Either:** Press **x** to go back into Installer Menu (so that you can go and check that all the bus devices you have installed are connected, powered up and addressed correctly).

Note: To check an expander address remove the lid and briefly press the addressing button. The two digit display will show the bus address for a few seconds.

OR: Press **✓** to make the control unit update its internal record of devices attached to the bus. The display shows:

Accept all changes
to bus?

- Press **✓** to accept the change to the bus. (You can still press **x** to return to the installer menu if you do not want to change the number of devices on the bus.)

Note: If you attempt to leave the Installer Menu when a detector/device tamper is active then the keypad displays a fault message telling you which detector/device

*is causing the problem. Press **x** to return to the Installer Menu. You must either close the detector/device tamper or delete it from the system before you can leave the Installer Menu.*

Important! Saving Changes

When you make changes to the Installer Menu the control unit holds those changes in temporary memory until you leave the Installer Menu. As you leave the Installer Menu the control unit writes those changes into a permanent store. If you remove all power BEFORE you leave the Installer Menu then the control unit will lose your changes. Note that this does not apply if you restore

Factory Defaults, that change takes place immediately.

Re-Entering the Installer Menu

When you enter the Installer Menu from a keypad, the alarm system is effectively disabled. While the system is in Installer Menu:

Any other user trying to set the system from a keypad will see the message "Installer on Site".

All Hold Up Devices (including radio HUDs), fire alarm zones, 24 hour zones and tampers are disabled.

Note that this does not apply if you are using the web browser interface from a PC. If you have logged into the system from a PC then the alarm system is active.

If you need to re-enter the Installer Menu:

1. Make sure the system is unset and showing the standby screen (time and date).

2. Key in the Installer access code. At Security Grade 2 the default Installer access code is "1234".

At Security Grade 3 the default Install access code is "123400".

As you start to key in the code the display shows:

```
Enter Access Code:
(*)
```

When you key in the last digit of the Installer access code the display shows:

```
User Code Required
{ }
```

Notes:

1. You will see this screen the first time you enter the Installer menu on a new control unit, or if you have restored Factory Defaults. You can disable this feature by using the Installer menu option System Options - User Access - User Code Required.
2. If you set User Code Required to NO then the control unit no longer complies with EN50131. This option complies with BS8243 only if the user has given written consent.
3. If you key in an access code incorrectly, the display shows four "stars". Key in the code again. If you key in a total of four incorrect codes then the system locks you out for 90 seconds.
3. Key in the default user code (see Note below).

At Security Grade 2 the default user

access code is "5678". At Security Grade 3 the code is "567800".

The display shows:

```
Installer Menu
Detectors/Devices>
```

4. Press ▲ or ▼ to display more items from the menu.

Each item appears on the bottom line of the display in turn, for example:

```
Installer Menu
Outputs >
```

5. Press ✓ to select that item of the menu.

The option you selected now appears on the top line. If there are any sub-options for that selection, then the first of them appears on the bottom line, for example:

```
Outputs
Radio Outputs >
```

You can press ▲ or ▼ to display the other sub-options.

Defaulting Access Codes

If the User 1 and/or Installer codes are lost then you must restore all user information to its factory defaults. All prox tags, remotes and radio HUDs will be deleted.

1. If possible, enter the Installer menu.

Note: If you cannot enter Installer Menu then the control unit will start a tamper alarm when you open the control unit lid.

2. Remove mains power, then open the case and disconnect the battery.

Note: This procedure will not work if the control unit lid tamper remains closed.

3. Identify the Reset Codes pins on the main PCB (see item 19 in Figure 3).
4. Short the Reset Codes pins together using a screwdriver or jumper link. (Keep the short on until step 6.)
5. Apply mains power.

The control unit loads the factory default access codes:

Grade 2: User 1=5678, Installer=1234.

Grade 3: User 1=567800, Installer=123400

After a short pause the system starts a a tamper alarm and the display shows the words "Please wait...". The red LEDs glow to show an alert that the control unit lid is open.

6. Remove the short from the Reset Codes pins.
7. Reconnect the battery.
8. Close the control unit lid (to restore the tamper switch).

The display shows the time and date, for example:

```
Menvier40
00:00 01/01/2009
```

9. Key-in the default user 01 code to silence the sounders.

The display shows:

```
Call Installer
Panel lid open
```

10. Enter Installer Menu and then leave it again.

The LEDs around the navigation key should now be green. If they glow red then there may be an alert for a missing battery that needs acknowledgement. To force the control unit to check the battery:

11. Press ✓, key in 5678 (or 567800 for Grade 3), press ✓ again.

The navigation key LEDs should now glow green.

Note: The log is protected and cannot be erased by the Installer.

Restoring Factory Defaults Only

If you wish to restore all factory default options, without defaulting the user and installer access codes then:

1. From the Installer Menu select *System Options – Restore Defaults – Factory Defaults*.

The display shows:

```
FACTORY DEFAULTS
Are you sure?
```

2. EITHER: Press ✕ to go back to the Installer Menu without changing defaults.

OR: Press ✓ to load defaults.

If you press ✓ the display shows:

```
A : Ward mode
B : Part set mode
```

3. Press A or B to select the desired mode.

The display shows:

```
SYSTEM GRADE
*Grade 3
```

4. Press ▲ or ▼ to display the desired Security Grade ("2" or "3") on the bottom line of the display and then press ✓ to select it.

The display shows:

```
WIRED ZONE TYPE
*2-wire FSL 2k2/4k7
```

5. Press ▲ or ▼ to display the desired wiring type on the bottom line of the display and then press ✓ to select it.

The system loads all defaults except for Access Codes and the Log.

The display briefly shows:

```
Factory defaults
restored
```

Followed by:

```
RESTORE DEFAULTS
Factory defaults >
```

6. Press ✕ until the display shows:

```
Leave
installer mode ?
```

7. Press ✓.

The display shows:

```
Please wait...
```

The control unit scans the bus to see what devices are attached and powered up. After several seconds (depending on the number of devices connected to the bus) the display shows, for example:

```
FOUND 3, LOST 0
Found R1-01
```

The top line of the display shows the number of new devices found. Because you have restored factory defaults the control unit has erased its internal list of bus devices and the display will not show any devices as missing. So, if a device is attached to the bus but not powered up then the control unit will not detect it. The bottom line of the display shows the first in the list of found devices. Press ▼ to see any other items in the list.

8. Press ✓.

The display shows:

```
Accept all changes
to bus?
```

9. Press ✓.

The keypad sounder gives "deed ah" confirmation tone and the display shows the time and date, for example:

```
Menvier40
15:10 01/01/2010
```

The control unit has saved all the changes you have made.

Step 12. Commission the System

Install Detectors and Other Peripherals

1. Use the Installer Menu to teach the system the identity of any radio detectors or other peripherals. (You must have a radio expander already connected and installed on the bus to do

this.) See the installation instructions supplied with each detector or peripheral.

Note: When checking signal strength from the User Menu the minimum acceptable signal strength from a detector is four units.

When checking the signal strength from the Installer Menu the minimum acceptable signal strength from a detector is two units. Record the reading shown in the Installer Menu for later inspection.

2. Install detectors and peripherals at their selected locations.
3. Use the *Installer Menu – Test* (see Chapter 5) option to:
 - a) carry out a walk test of the detectors.
 - b) test the operation of any other peripherals.

Program the System

Program the system to suit user requirements. Page 28 is a summary of the Installer Menu on the control unit. Please see the *Menvier40/100/300 Engineering Guide* for a more detailed description.

Note: make sure that you allocate keypads correctly to wards. For more information see "Assigning Wired Keypads to Wards" in the Menvier40/100/300 Engineering Guide.

Assemble and close the control unit:

- a) Fit the lid of the control unit into the back of the case (see Fig 39).
- b) Fit and tighten the lid fixing screw.

NOTE: It is possible, for convenience, to place links over tamper contacts to inhibit tamper alarm during installation. Because of this feature make sure you test all lid tampers before completing installations, to ensure that no links are left fitted.

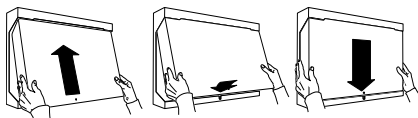


Figure 39 Replacing the control unit lid.

Leave the Installer Menu.

The red LEDs should go out, and the rim of the navigation keys glow green. The system is now ready to hand over to the user.

Handover to the User

Instruct the user on how to operate the system. See the *Menvier40/100/300 Administrator's Guide*. If necessary, show them how to set the time and date on the system.

Remember to leave the *Menvier40/100/300 Administrator's Guide* with the user.

Installer Menu

1 DETECTORS/ DEVICES

Detectors

Add/Del Detectors
Program Zones

Address Bus Device

Wired Expanders

Address Bus Device
Edit Expander
Delete Expander
Enable Expander
Replace Expander

Radio Expanders

Address Bus Device
Edit Expander
Delete Expander
Enable Expander
Replace Expander

Wired Keypads

Address Bus Device
Edit Keypad
Delete Keypad
Enable Keypad
Replace Keypad

Radio Keypads

Add/Del Radio Keypad
Edit Keypads¹

External Sirens

Add/Delete Ext. Siren
Edit external siren¹

WAMs

Add/Del WAM
Edit WAM¹

2 OUTPUTS

Radio outputs

Add Outputs
Edit Outputs

Wired outputs

Panel
Siren
Strobe
O/P P0>00>01...3
Exp. x1-nn...

O/P x1>nn>1...4

Name

Type

Polarity

Wards²

Plug-by outputs

Output 01...16

Name

Type

Polarity

Wards²

Custom Outputs

Custom Output 1-5

3 SETTING OPTIONS³

Full Set

Name
Exit mode
Settle time⁴
Exit time⁵
Entry time
Siren delay

Siren time
Strobe on Set
Strobe on Unset

Part Set B

Name
Exit Mode
Settle time⁴
Exit time⁵
Entry time
Alarm Response
Siren delay
Siren time
Part Set Final Exit
Part Set Entry Route
Strobe on Set
Strobe on Unset

Part C, D (See Part Set B) Calendar Set

3 WARDS²

Ward 1

Name
Exit mode
Settle time⁴
Exit time⁵
Entry time

Alarm response

HUA response

Siren delay

Siren time

Strobe on Set

Strobe on Unset

Part set exit mode⁴

Part set settle time⁴

Part set exit time⁵

Part set entry time

Part set alarm resp.

Part set siren delay

Part set siren time

Part set final exit

Part set entry route

Part set strobe set

Part set strobe unset

Ward 2...5

Full Set Link

Ward 2...5

Calendar Set

Add Event
Edit Event
Delete Event
Add Exception
Edit Exception
Delete Exception

4 SYSTEM OPTIONS

Wired Zone type

Panel

All Zones

User Access

HUA keys active
Quick set
Quick omit
User code reqd
2 Way Replies
Duress Enable

User reset

Zone alarms⁶

Zone tampers

System tampers

Confirmation

Confirmation Mode

Basic

DD243

BS8243

Confirmation time⁷

After entry⁷

Entry keypad lock⁷

Sounder on

Siren on

Unconfirmed reset⁷

Confirmed reset⁷

HUA Confirm Time⁸

Tamper as Tamper-only

Masking

Mask Override⁹

Shunt Groups¹⁰

Restore defaults

Staged defaults

Factory defaults

Installer name

Installer code

Keypad text

Remote needs Entry

HUA Response¹¹

Auto Rearm⁶

Panel Loudspeaker

Entry alarm delay

Abort Time

Supervision

Jamming

Force Set

Tamper Omit

CSID Code

Silence Alerts

Mains Fail Delay

Set Time & Date

Panel Tamper Rtn

5 COMMUNICATIONS

ARC Reporting

Call Mode

Phone book

IP Network¹²

Account Number

Report Type

Fast Format channels¹³

CID/SIA Events¹⁴

Restorals

Burg Comms Rearm¹⁷

21CN FF Ack time¹³

Send tamper as burg¹⁴

Dynamic Test Call¹⁵

Static Test Call¹⁶

Unset Comms

Speech Dialler¹²

Call Mode

Messages

Phone Book

Triggers

Destinations

Call Acknowledge

SMS¹²

Call Mode

Messages

Phone Book

Triggers

PSTN SMS¹²

Line Fail Response

Line Fail Delay

IP Network (Own)

Web Server

Status

Port Number

IP Address

Subnet Mask

Gateway Address

GPRS¹²

Ethernet¹²

Downloading

Account

Connection Type

Rings to Answer¹²

Answer on one ring¹²

Access Mode¹²

Phone Book¹²

Secure Callback¹²

Modem Baud Rate¹²

6 TEST

Sirens & Sounders

Wired Keypad

Radio Keypads

Expanders

Walk Test

Zone Resistances

Signal Strengths

Detectors

Radio Keypads

External Sirens

WAMs

Outputs

Radio Outputs

Wired Outputs

Plug-by Outputs

Expander Outputs

Remotes

User HUAs

Prox Tags

ARC Reporting

Speech Dialler¹²

PSU Current

Battery(s)

Locate Panel

Locate Bus Device

7 VIEW LOG

8 ABOUT

Panel

Expanders

Keypads

Comms

Module:¹⁸

Panel Ethernet

Zone Mapping

- ¹ Appears only when device learned in.
² Appears only in a Ward based system.
³ Appears only in a Level Setting system.
⁴ Appears only if Exit Mode is "Final Door Set", "Lock Set" or "Exit Terminate".
⁵ Appears only if Exit Mode is "Timed Set" or "Silent Set".
⁶ Appears only when System Options – Confirmation – Confirmation Mode is "Basic".
⁷ Appears only when System Options – Confirmation – Confirmation Mode is "DD243" or "BS8243".
⁸ Appears only when System Options – Confirmation – Confirmation Mode is "BS8243".
⁹ Appears only when System Options – Masking is "On".
¹⁰ There is one Shunt Group available on Menvier40, five available on Menvier100.
¹¹ Appears here only in a part setting system.
¹² Options visible depend on communications module fitted, see Table 2 below.
¹³ Appears only when Report Type=Fast Format
¹⁴ Appears when Report Type=CID or SIA
¹⁵ Appears only when Static Test call disabled.
¹⁶ Appears only when Dynamic Test call is disabled.
¹⁷ Appears only when Report Type = Fast Format and Confirmation Mode = Basic.
¹⁸ Shows "None" if no module fitted.

Table 2. Menu Options Available with Communications Modules

Communications Menu Options:	Control unit only	With Communications Module				
		i-sd02	i-dig02	i-gsm02	8750	GPRS
ARC	Yes	Yes	Yes	Yes	Yes	Yes
ARC – IP Network	No	No	No	No	Yes	Yes
Speech Dialler	No	Yes	No	Yes	No	No
SMS	Yes	Yes	Yes	Yes	No	No
PSTN SMS	Yes	Yes	Yes	No	No	No
Line Fail	Yes	Yes	Yes	Yes	Yes	Yes
Line Fail Delay	Yes	Yes	Yes	Yes	Yes	Yes
IP Network (Own)	Yes	Yes	Yes	Yes	Yes	Yes
GPRS	No	No	No	No	No	Yes
Ethernet	No	No	No	No	Yes	No
Downloading - Rings to answer	Yes	Yes	Yes	No	No	No
Downloading - Answer on one ring	Yes	Yes	Yes	No	No	No
Downloading - Access Mode	Yes	Yes	Yes	Yes	No	Yes
Downloading - Phone Book	Yes	Yes	Yes	Yes	No	No
Downloading - Secure Callback	Yes	Yes	Yes	Yes	No	Yes
Downloading - Modem Baud Rate	Yes	Yes	Yes	No	No	No
Downloading - IP address	No	No	No	No	Yes	Yes

4. Maintenance

The control unit should be inspected once per year. At each inspection:

Check the control unit for obvious signs of damage to the case or its lid.

Check the action of the back tamper.

Check the condition of the control unit standby battery.

Check the cabling to the keypad(s) and expander(s) for signs of damage or wear.

Check the keypads for obvious signs of damage.

Test the action of all buttons on all keypads.

Clean the keypad surface and display.

To clean the keypad wipe the surface with a clean soft dry cloth. Do not use water, solvents or any proprietary cleaning materials.

Monitor the signal strength and battery condition of all detectors, radio keypads, remote controls, PAs and radio sounders. Test each device. Replace batteries as recommended by the manufacturer's instructions.

Gently clean the lenses of any PIRs with a clean, soft dry cloth. Do not use water, solvents or any proprietary cleaning materials.

Walk test all detectors.

Test any external sounders and strobes.

Note that if you wish to find the location of any keypad or expander you can employ the *Test – Locate Bus Device* option in the Installer Menu. Use this option to make a selected bus device give a continuous tone from its sounder. Once you have found the bus device you can silence the tone by opening the case and so activating the device's tamper.

5. Technical Specification

General

Product name	Menvier40 or Menvier100.
Product Description	40 zone/100 zone hybrid endstation with remote keypads.
Manufacturer	Cooper Security Ltd.
Environmental	Class II.
Operating temperature	Tested -10 to +55°C.
Humidity	0 to 93% RH, non-condensing.
Case material	Steel.

Dimensions:

Control unit	320 x 400 x 98, mm HxWxD.
Keypad	115 x 156 x 30, mm HxWxD

Weight:

Control unit	4.9 kg (without stand-by battery).
Keypad	0.26 kg

Capacities (Menvier40)

Zones	40 max (with expanders)
Outputs	40 max (with expanders)
Expanders and Wired Keypads	20 max devices (see note)
Radio Keypads	5 max (two per radio expander)
External Radio Sirens	5 max (two per radio expander)
WAMs	5 max (two per radio expander, repeater mode only)
Wards	5
Calendar Set Timers	5 max
Log capacity	Up to 1,000 events: 750 mandatory events, 250 non-mandatory. Stored in EEPROM memory, available for at least 10 years without power.
User Codes	100 (plus installer code)
Remote controls	100 (one per user)
Radio Hold Up Devices	100 (one per user)
Proximity tags	100 (one per user)

Note: Wired keypads, wired zone expanders, and radio zone expanders are all bus devices. You can connect any combination of these devices to the bus.

Capacities (Menvier100)

Zones	100 max (with expanders)
Outputs	100 max (with expanders)
Expanders and Wired Keypads	45 max devices (see note)
Radio Keypads	10 max (two per radio expander)
External Radio Sirens	10 max (two per radio expander)
WAMs	10 max (two per radio expander, repeater mode only)
Wards	10
Calendar Set Timers	10 max
Log capacity	Up to 1,250 events: 1,000 mandatory events, 250 non-mandatory. Stored in EEPROM memory, available for at least 10 years without power.
User Codes	250 (plus installer code)
Remote controls	250 (one per user)
Radio Hold Up Devices	250 (one per user)
Proximity tags	250 (one per user)

Note: Wired keypads, wired zone expanders, and radio zone expanders are all bus devices. You can connect any combination of these devices to the bus.

Capacities (Both)

Outputs	16 plug-by communicator outputs plus 3 wired on control unit (two transistor and one relay) 4 transistor based on each wired expander 8 radio outputs on each 768/769 2 radio outputs on each 762
Radio Keypads	5 max (two per radio expander)
Loudspeakers	1 on control unit, one per expander
Plug on communication modules	One
Other ports	1 x USB, 1 x Ethernet
Internal Clock	±10 minutes over one year.

Notes:

1. *Wired keypads, wired zone expanders, and radio zone expanders are all bus devices. You can connect any combination of these devices to the bus.*
2. *The system can be used as EITHER a ward based system OR a part setting*

system. When used as a part setting system there are four setting levels available: Full Set and Part Sets B, C and D.

Security

Security Grade	Grade 2 or 3
Radio detector differs	16,777,214 ($2^{24} - 2$).
Radio Supervision	Programmable.
Number of access codes	100 plus one installer
Access code differs	10,000 differs with 4 digit codes. 1,000,000 differs with six digit codes. All digits may be any number 0 to 9.
Code blocking	Blocked for 90s after 10 incorrect codes in series.
Proximity tag differs	4,294,967,296 (2^{32})

Power Supply

This product complies with the requirements of EN50131-6 Type A power supply at Grade 3 and environmental class 2.

Power supply type	A
Mains power supply requirements	230VAC +10%/-15%, 170mA max, 50Hz.
Total power supply capacity:	1.5A (of which 750mA is used for battery recharge and 750mA is available for powering the system).
12V Aux supply*:	500mA max
12V Bell supply	500mA max
Comms power supply*:	400mA max
12V Expander Bus*:	400mA max
LS connectors	280mA in alarm.

**Note: The ratings given here represent the maximum current that can be drawn before triggering over-current protection.*

EN50131-6 ratings

The control unit provides space for one 17Ah battery.

Under EN50131-6 for Security Grade 3 installations the required battery standby time is 60 hours. However, with an ATS4

communicator fitted the requirement drops to 30 hours.

This means that all the devices powered by the backup battery, including the control unit and at least one keypad, should together draw no more in total than an average of 570mA over a 30 hour standby time. Note that for Security Grade 3 the control unit must use a plug-by communicator, which may have its own power supply.

For Security Grade 2 the required battery standby time is 12 hours. However, the total average current available over 12 hours from the 17Ah battery is limited by the power supply to 750mA. (The current is limited to 750mA because when mains is present the 1.5A power supply reserves 750mA to recharge batteries, leaving 750mA available to supply the system.)

The table below shows the current consumption of the control unit and each device that can be fitted to it.

CIE power requirement:	120mA min. 200mA max
i-kp01 power requirement:	30mA (normal/idle) 45mA (backlight low) 65mA (backlight high)
Wired Expander requirement	20mA max quiescent. 300mA in alarm if sounder connected.
Radio Expander requirement	40mA max quiescent 320mA in alarm if sounder connected.
Battery charging requirement:	750mA per battery (recharge to 80% within 24 hrs)
Plug-on Communicator power requirement:	i-sd02 or i-dig02: 20mA quiescent 50mA max
Plug-on Communicator power requirement	i-gsm02: 150mA quiescent and max.
Plug-by Communicator pins require:	3mA each when active.
10 FSL zones	20mA
5 CCL zones	30mA
12V Bus output voltage range :	10±0.5V to 13.8V
12V Aux output voltage range:	10±0.5V to 13.8V
12V Bell output voltage range	10±0.5V to 13.8V
Max p-to-p ripple voltage:	0.5V

Standby Battery:	12V, 17Ah sealed lead acid (not supplied).
'Low battery' fault at:	< 12V
Aux power output fault at:	< 9V
Deep discharge protection at:	10±0.5V
Overvoltage protection trigger voltage	15.8±1.0V
Standby time:	See "Power Availability" on page 8.

Electromagnetic Compatibility

Immunity	Conforms to EN50130-4.
Emissions	Conforms to EN61000-6-3.

Outputs

Panel: O/P 1	Voltage free, single pole relay contacts rated 24VDC @ 1A.
Panel: O/P 2 - 3	Open collector transistor, +12VDC when inactive, 0V when active. 500mA max.
Plug-by O/P 1-16	Open collector transistor +12VDC when inactive, 0V when active, 50mA max.
LS 1 (loudspeaker)	Min impedance 16 Ohm per output, current consumption = 280mA in alarm.
Expander: Outputs	Open collector transistor, +12VDC when inactive, 0V when active. 500mA max. <i>Note: The current is limited by the amount available from the power supply driving the expander.</i>

Sounder Volume Levels (at 1m)

i-kp01 (at max volume)	70dB
Expander sounders	70dB
Expander 16 Ohm loudspeaker	93dB

Fuses

The control unit has a replaceable T250mA mains fuse.

Electrical Safety

Conforms to EN60950-1.

Other

If you wish to connect the control unit to a PC using either the Ethernet or the USB port then make sure that the cables have the following specifications:

Ethernet	Cat5e patch cable, RJ45 male plugs at each end, suitable for 10/100Base-T.
USB	Mini-B plug for control unit end, USB-A for PC end. Max length 3m.

Radio Expander and Keypads

Radio	Operating frequency 868.6625MHz Narrowband. EN 300 220-3. EN 300 330-2
Transmitter range	The range of the transmitters compatible with this control unit depends on the environment in which they are installed. As a guideline, most transmitters will work up 200m range in free space conditions.

Compliance Statements

The Menvier40 and Menvier100 are compliant with EN50130-5 environmental class II.

The Menvier40 and Menvier100 are suitable for use in systems designed to comply with PD 6662: 2010 at grade 3.

When installed correctly the Menvier40 and Menvier100 are capable of compliance with EN50131 at Grade 3.

To maintain Grade 3 the Menvier40 and Menvier100 must be fitted with a communicator of level ATS4 or above.

When fitted with radio devices the Menvier40 and Menvier100 are capable of compliance with EN50131 at Grade 2.

The i-sd02 is compliant with EN50136-1 as an ATS2 communicator.

The i-sd02 may be used as a supplementary communicator at Grade 3.

At Grade 2 the i-sd02 provides a compliant communicator for the Menvier40 and Menvier100 provided that:

- It is installed in accordance with the installation instructions.
- The connected PSTN is functioning normally.

When fitted with an i-sd02 the control unit provides options A, B and C at Grade 2 as noted in Table 10 of EN50131-1:2006+A1:2009.

If the installer selects a non-compliant configuration then they must remove or adjust compliance labelling

Third party testing carried out by Anpi.

Compatible Equipment

705rEUR-00	Two button HUA (top button is disabled)
703rEUR-00	4-channel (2 zone) transmitter
706rEUR-00	Two button HUD/tilt switch transmitter
710rEUR-00	Two button HUD
713rEUR-00	Pet tolerant PIR
714rEUR-00	PIR Transmitter (Small case)
720rEUR-00	Smoke Detector Transmitter
726rEUR-50	Long range hand held HUD
726rEUR-60	Short range hand held HUD
727rEUR-00	Four button remote control with encrypted code (HUD function not compatible with BS8243)
734rEUR-00/01	CC/FSL Door Contact Transmitter (white)
734rEUR-05/06	CC/FSL Door Contact Transmitter (brown)
738rEUR-00/04	Spyder shock sensor (white/brown)
739rEUR-50	Sentrol glass break detector (no tamper)
760ES	External Wireless sounder
762rEUR-00	Two Channel Receiver
768rEUR-50	Eight Channel Receiver
770rEUR-00	Wireless Accessory Module (repeater mode only)
08844EUR-00	GPRS module (obsolete)

08750EUR-00	Ethernet module (obsolete)
9040UK-00	Speaker boxed
i-fb01	Four button remote control
i-rc01	Relay Card
i-rk01	Radio Keypad
i-sd02	PSTN Communication module with speech dialling
i-dig02	PSTN Communication (ARC only).
i-gsm02	GSM communications module
EXP-W10	10 zone wired expander
EXP-R10	10 zone radio expander
EXP-R30	30 zone radio expander
FOB-2W-4B	Two-way keyfob
i-kp01	Keypad for Menvier40 or Menvier100 systems when containing keypad s/w v3.02 or higher.
key-eng	Engineering keypad.
xcelr	Radio PIR
xcelrpt	Pet tolerant radio PIR
xcelw	Wired PIR
xcelwpt	Pet tolerant wired PIR